

AMENDMENTS TO THE CLAIMS

1-12. (Canceled)

13. (Currently Amended) A high-frequency signal level ~~determining detection~~ apparatus comprising:

an AGC circuit for executing an automatic gain control on an intermediate frequency signal obtained by converting a frequency of a received high-frequency signal, using an RFAGC value for controlling a gain of the received high-frequency signal and an IFAGC value for controlling a gain of the intermediate frequency signal based on the intermediate frequency signal so that an output level of the intermediate frequency signal is substantially constant; and

determining detecting means for previously measuring first relational data indicating an RFAGC value relative to an inputted signal level of a generated ~~the received~~ high-frequency signal and second relational data indicating an IFAGC value relative to the inputted signal level of the generated ~~received~~ high-frequency signal, for measuring the RFAGC value and the IFAGC value when a high-frequency signal to be measured is received, and for determining detecting the inputted signal level of the received high-frequency signal using the measured first and second relational data based on the measured RFAGC value and IFAGC value,

wherein the received high-frequency signal has a plurality of frequencies, and

wherein said determining detecting means previously measures a first relational data indicating the RFAGC value relative to the inputted signal level and a second relational data indicating the IFAGC value relative to the inputted signal level, using a generated high-frequency

signal having a substantial central frequency among the plurality of frequencies.

14. (Currently Amended) The high-frequency signal level ~~determining detection~~ apparatus as claimed in claim 13,

wherein said ~~determining detecting~~ means determines ~~detects~~ the inputted signal level of the received high-frequency signal using only the second relational data based on the measured IFAGC value when the gain of the received high-frequency signal is a maximum value thereof.

15. (Currently Amended) The high-frequency signal level ~~determining detection~~ apparatus as claimed in claim 13,

wherein said ~~determining detecting~~ means determines ~~detects~~ the inputted signal level of the received high-frequency signal using only the first relational data based on the measured RFAGC value when the gain of the received high-frequency signal is not a maximum value thereof.

16. (Currently Amended) The high-frequency signal level ~~determining detection~~ apparatus as claimed in claim 13,

wherein said ~~determining detecting~~ means determines ~~detects~~ a first inputted signal level of the received high-frequency signal using the measured first relational data based on the measured RFAGC value, determines ~~detects~~ a second inputted signal level of the received high-frequency signal using the measured second relational data based on the measured IFAGC value,

and ~~determines detects~~ an average value of the ~~determined detected~~ first and second inputted signal levels as the inputted signal level of the received high-frequency signal.

17. (Currently Amended) The high-frequency signal level ~~determining detection~~ apparatus as claimed in claim 13,

wherein the received high-frequency signal has a plurality of frequencies,

wherein said ~~determining detecting~~ means previously measures the following parts using two generated high-frequency signals having a maximum frequency and a minimum frequency among the plurality of frequencies, respectively:

(a) a first part of the first relational data indicating the RFAGC value relative to the inputted signal level of the generated high-frequency signal having the maximum frequency;

(b) a first part of the second relational data indicating the IFAGC value relative to the inputted signal level of the generated high-frequency signal having the maximum frequency;

(c) a second part of the first relational data indicating the RFAGC value relative to the inputted signal level of the generated high-frequency signal having the minimum frequency; and

(d) a second part of the second relational data indicating the IFAGC value relative to the inputted signal level of the generated high-frequency signal having the minimum frequency,

wherein said ~~determining detecting~~ means ~~determines detects~~ a first inputted signal level of the received high-frequency signal using the measured first part of the first relational data based on the measured RFAGC value, ~~determines detects~~ a second inputted signal level of the received high-frequency signal using the measured first part of the second relational data based

on the measured IFAGC value, and determines ~~detects~~ an average value of the determined ~~detected~~ first and second inputted signal levels as the inputted signal level of the received high-frequency signal having the maximum frequency,

wherein said determining ~~detecting~~ means determines ~~detects~~ a third inputted signal level of the received high-frequency signal using the measured second part of the first relational data based on the measured RFAGC value, determines ~~detects~~ a fourth inputted signal level of the received high-frequency signal using the measured second part of the second relational data based on the measured IFAGC value, and determines ~~detects~~ an average value of the determined ~~detected~~ third inputted signal level and the determined ~~detected~~ fourth inputted signal level as the inputted signal level of the received high-frequency signal having the minimum frequency, and

wherein said determining ~~detecting~~ means calculates the inputted signal level of the received high-frequency signal to be measured using a linear approximation method for linearly approximating the inputted signal level relative to a reception frequency of the received high-frequency signal to be measured based on the determined ~~detected~~ inputted signal level of the received high-frequency signal having the maximum frequency and on the determined ~~detected~~ inputted signal level of the received high-frequency signal having the minimum frequency.

18. (Currently Amended) The high-frequency signal level determining ~~detection~~ apparatus as claimed in claim 13,

wherein the received high-frequency signal has a plurality of frequencies,

wherein a frequency range including the plurality of frequencies is divided into a plurality

of frequency ranges, and

wherein said determining ~~detecting~~ means previously measures the first and second relational data in each of the divided frequency ranges, and determines ~~detects~~ the inputted signal level of the received high-frequency signal using the measured first and second relational data corresponding to the frequency range to which the frequency of the received high-frequency signal to be measured belongs.

19. (Currently Amended) The high-frequency signal level determining ~~detection-~~ apparatus as claimed in claim 13,

wherein said determining ~~detecting~~ means previously measures third relational data, that is a determined ~~detected~~-error in the IFAGC value of the second relational data indicating the IFAGC value relative to the inputted signal level of the received high-frequency signal, the determined ~~detected~~-error being caused, between a case with an interference signal of a further received high-frequency signal in the vicinity of the frequency of the received high-frequency signal to be measured, and a case with no interference signal thereof, and

wherein said determining ~~detecting~~ means determines ~~detects~~ the determined ~~detected~~-error using the third relational data based on the IFAGC value measured for the received high-frequency signal to be measured, and corrects the determined ~~detected~~-inputted signal level using the determined ~~detected~~-error.

20. (Currently Amended) The high-frequency signal level determining ~~detection-~~

apparatus as claimed in claim 13,

wherein said determining ~~detecting~~ means previously measures the following parts:

(a) a first part of third relational data, that is a first determined ~~detected~~-error in the IFAGC value of the second relational data indicating the IFAGC value relative to the inputted signal level of the received high-frequency signal, the first determined ~~detected~~-error being caused, between a first case with interference signals of further received high-frequency signals located on both sides of the frequency of the received high-frequency signal to be measured, and a case with no interference signal thereof; and

(b) a second part of the third relational data, that is a second determined ~~detected~~-error in the IFAGC value of the second relational data indicating the IFAGC value relative to the inputted signal level of the received high-frequency signal, the second determined ~~detected~~-error being caused, between a second case with an interference signal of further received high-frequency signal located on one side of the frequency of the received high-frequency signal to be measured, and a case with no interference signal thereof,

wherein said determining ~~detecting~~ means determines ~~detects~~ one of the first and second determined ~~detected~~-errors based on the IFAGC value measured for the received high-frequency signal to be measured using one of the first and second parts of the third relational data which respectively correspond to states in which the received high-frequency signal to be measured is in the first and second cases, and corrects the determined ~~detected~~-inputted signal level using the determined ~~detected~~-error.

21. (Currently Amended) The high-frequency signal level determining ~~detection~~-apparatus as claimed in claim 13,

wherein said determining ~~detecting~~-means represents the first relational data and the second relational data by predetermined approximate functions, respectively, and determines ~~detects~~ the inputted signal level of the received high-frequency signal using the approximate function of the first relational data and the approximate function of the second relational data.

22. (Currently Amended) The high-frequency signal level determining ~~detection~~-apparatus as claimed in claim 13, further comprising display means for displaying the inputted signal level determined ~~detected~~ by said determining ~~detecting~~-means.

23. (Currently Amended) A high-frequency signal receiver apparatus, comprising:
a receiver for receiving a high-frequency signal, for converting the received high-frequency signal into an intermediate frequency signal, and for outputting the intermediate frequency signal; and

a high-frequency signal level determining ~~detection~~-apparatus comprising: [[,]]

an AGC circuit for executing an automatic gain control on the intermediate frequency signal, using an RFAGC value for controlling a gain of the received high-frequency signal and an IFAGC value for controlling a gain of the intermediate frequency signal based on the intermediate frequency signal so that an output level of the intermediate frequency signal is substantially constant; and

~~determining detecting~~ means for previously measuring first relational data indicating an RFAGC value relative to an inputted signal level of the received high-frequency signal and second relational data indicating an IFAGC value relative to the inputted signal level of the received high-frequency signal, for measuring the RFAGC value and the IFAGC value when a high-frequency signal to be measured is received, and for ~~determining detecting~~ the inputted signal level of the received high-frequency signal using the measured first and second relational data based on the measured RFAGC value and IFAGC value,

wherein the received high-frequency signal has a plurality of frequencies, and

wherein said ~~determining detecting~~ means previously measures a first relational data indicating the RFAGC value relative to the inputted signal level and a second relational data indicating the IFAGC value relative to the inputted signal level, using a generated high-frequency signal having a substantial central frequency among the plurality of frequencies.

24. (Currently Amended) The high-frequency signal receiver apparatus as claimed in claim 23,

wherein said ~~determining detecting~~ means determines ~~detects~~ the inputted signal level of the received high-frequency signal using only the second relational data based on the measured IFAGC value when the gain of the received high-frequency signal is a maximum value thereof.

25. (Currently Amended) The high-frequency signal receiver apparatus as claimed in claim 23,

wherein said ~~determining detecting~~ means determines detects the inputted signal level of the received high-frequency signal using only the first relational data based on the measured RFAGC value when the gain of the received high-frequency signal is not a maximum value thereof.

26. (Currently Amended) The high-frequency signal receiver apparatus as claimed in claim 23,

wherein said ~~determining detecting~~ means determines detects a first inputted signal level of the received high-frequency signal using the measured first relational data based on the measured RFAGC value, determines detects a second inputted signal level of the received high-frequency signal using the measured second relational data based on the measured IFAGC value, and determines detects an average value of the determined detected first and second inputted signal levels as the inputted signal level of the received high-frequency signal.

27. (Currently Amended) The high-frequency signal receiver apparatus as claimed in claim 23,

wherein the received high-frequency signal has a plurality of frequencies,

wherein said ~~determining detecting~~ means previously measures the following parts using two generated high-frequency signals having a maximum frequency and a minimum frequency among the plurality of frequencies, respectively:

(a) a first part of the first relational data indicating the RFAGC value relative to the

inputted signal level of the generated high-frequency signal having the maximum frequency;

(b) a first part of the second relational data indicating the IFAGC value relative to the inputted signal level of the generated high-frequency signal having the maximum frequency;

(c) a second part of the first relational data indicating the RFAGC value relative to the inputted signal level of the generated high-frequency signal having the minimum frequency; and

(d) a second part of the second relational data indicating the IFAGC value relative to the inputted signal level of the generated high-frequency signal having the minimum frequency,

wherein said ~~determining~~ ~~detecting~~ means determines ~~detects~~ a first inputted signal level of the received high-frequency signal using the measured first part of the first relational data based on the measured RFAGC value, determines ~~detects~~ a second inputted signal level of the received high-frequency signal using the measured first part of the second relational data based on the measured IFAGC value, and determines ~~detects~~ an average value of the determined ~~detected~~ first and second inputted signal levels as the inputted signal level of the received high-frequency signal having the maximum frequency,

wherein said ~~determining~~ ~~detecting~~ means determines ~~detects~~ a third inputted signal level of the received high-frequency signal using the measured second part of the first relational data based on the measured RFAGC value, determines ~~detects~~ a fourth inputted signal level of the received high-frequency signal using the measured second part of the second relational data based on the measured IFAGC value, and determines ~~detects~~ an average value of the determined ~~detected~~ third inputted signal level and the determined ~~detected~~ fourth inputted signal level as the inputted signal level of the received high-frequency signal having the minimum frequency, and

wherein said determining ~~detecting~~ means calculates the inputted signal level of the received high-frequency signal to be measured using a linear approximation method for linearly approximating the inputted signal level relative to a reception frequency of the received high-frequency signal to be measured based on the determined ~~detected~~ inputted signal level of the received high-frequency signal having the maximum frequency and on the determined ~~detected~~ inputted signal level of the received high-frequency signal having the minimum frequency.

28. (Currently Amended) The high-frequency signal receiver apparatus as claimed in claim 23,

wherein the received high-frequency signal has a plurality of frequencies,

wherein a frequency range including the plurality of frequencies is divided into a plurality of frequency ranges, and

wherein said determining ~~detecting~~ means previously measures the first and second relational data in each of the divided frequency ranges, and determines ~~detects~~ the inputted signal level of the received high-frequency signal using the measured first and second relational data corresponding to the frequency range to which the frequency of the received high-frequency signal to be measured belongs.

29. (Currently Amended) The high-frequency signal receiver apparatus as claimed in claim 23,

wherein said determining ~~detecting~~ means previously measures third relational data, that

is a determined ~~detected~~-error in the IFAGC value of the second relational data indicating the IFAGC value relative to the inputted signal level of the received high-frequency signal, the determined ~~detected~~-error being caused, between a case with an interference signal of a further received high-frequency signal in the vicinity of the frequency of the received high-frequency signal to be measured, and a case with no interference signal thereof, and

wherein said determining ~~detecting~~-means determines ~~detects~~ the determined ~~detected~~-error using the third relational data based on the IFAGC value measured for the received high-frequency signal to be measured, and corrects the determined ~~detected~~-inputted signal level using the determined ~~detected~~-error.

30. (Currently Amended) The high-frequency signal receiver apparatus as claimed in claim 23,

wherein said determining ~~detecting~~-means previously measures the following parts:

(a) a first part of third relational data, that is a first determined ~~detected~~-error in the IFAGC value of the second relational data indicating the ~~the~~ IFAGC value relative to the inputted signal level of the received high-frequency signal, the first determined ~~detected~~-error being caused, between a first case with interference signals of further received high-frequency signals located on both sides of the frequency of the received high-frequency signal to be measured, and a case with no interference signal thereof; and

(b) a second part of the third relational data, that is a second determined ~~detected~~-error in the IFAGC value of the second relational data indicating the IFAGC value relative to the inputted

signal level of the received high-frequency signal, the second ~~determined detected~~-error being caused, between a second case with an interference signal of further received high-frequency signal located on one side of the frequency of the received high-frequency signal to be measured, and a case with no interference signal thereof,

wherein said ~~determining detecting~~-means ~~determines detects~~-one of the first and second ~~determined detected~~-errors based on the IFAGC value measured for the received high-frequency signal to be measured using one of the first and second parts of the third relational data which respectively correspond to states in which the received high-frequency signal to be measured is in the first and second cases, and corrects the ~~determined detected~~-inputted signal level using the ~~determined detected~~-error.

31. (Currently Amended) The high-frequency signal receiver apparatus as claimed in claim 23,

wherein said ~~determining detecting~~-means represents the first relational data and the second relational data by predetermined approximate functions, respectively, and ~~determines detects~~-the inputted signal level of the received high-frequency signal using the approximate function of the first relational data and the approximate function of the second relational data.

32. (Currently Amended) The high-frequency signal receiver apparatus as claimed in claim 23, further comprising display means for displaying the inputted signal level ~~determined detected~~-by said ~~determining detecting~~-means.